REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated January 21, 2005. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due consideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-15 are under consideration in this application. Claims 1-3, 5-6, 8 and 12 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicants' invention.

The claims are being amended to correct formal errors and/or to better recite or describe the features of the present invention as claimed. All the amendments to the claims are supported by the specification.

The method for displaying a dendrogram comprising the steps of: clustering a plurality of biopolymers with a first clustering method which is based on a set of gene expression data obtained by experiments on the plurality of biopolymers, and displaying clustering results thereof in a form of a dendrogram in a display window; selecting a subtree in the dendrogram in the display window; Claim 1: displaying the selected subtree in a separate display window (Fig. 6; p. 7, last paragraph) or Claim 3: replacing the selected subtree with an icon 701 in the dendrogram (Fig. 7; p. 8, 2nd paragraph) thereby displaying the dendrogram with the icon rather than with the selected subtree ("*The subtree 505 cab be replaced with an icon 701, by which a global state of the dendrogram can readily be observed*" p. 8, lines 16-17; Fig. 7); grouping biopolymers in the selected subtree in the separate display window into at least one function group sharing a common one of functional characteristics including enzymatic (p.2, line 5), metabolic (p. 2, line 6), transporting (Fig. 11), and cell cycle (Fig. 13) functions ("*gene groups with similar functions*" p. 8, lines 17-18; "*genes belonging to the same cluster may possibly share common functional characteristics*" p. 3, line 7-8; "*function units or function groups are also analyzed by correlating with known enzymatic reaction data or metabolism data*" p. 2, lines 4-6; Function 1104: CELL CYCLE in Fig. 11; Function: TRANSPORT in Fig. 13); and displaying said function group of biopolymers in the separate display window. Claim 2 recites an additional step of designating a second clustering method, which is different from the first clustering method, for further

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clustering the biopolymers in the selected subtree in the separate display window ("*selecting a subtree and then subjecting the selected subtree to another clustering method*" p. 4, lines 22-23).

The method for displaying a dendrogram of claims 5-6 comprising the same clustering, subtree-selecting, grouping, and function group displaying steps of claims 1 & 3, and the following steps.

Claim 5: searching in the selected subtree for keywords available in a keyword dictionary file ("*Figure 8 is a view showing an exemplary screen displayed upon selecting a command 'search for keyword contained in this subtree' from the menu shown in Figure 5. Among genes contained in the selected subtree, genes having gene information with predetermined keywords are counted and the results are displayed as search results 801*" p. 8, last paragraph; Fig. 16; "*Fig. 16 is a diagram showing an example of a search structure for storing a query of search and its results. For each keyword registered in the keyword dictionary file 906, a single structure is generated*" p. 18, lines 18-21); and counting biopolymers in the selected subtree whose biopolymer information contains at least one of the searched keywords available in the selected subtree and displaying each of the searched keywords available in the selected subtree with a corresponding count of the biopolymers whose biopolymer information contains at least one of the searched keywords available in the selected subtree (p. 8, lines 23-25); grouping biopolymers in the selected subtree into at least one function group sharing a common one of functional characteristics including enzymatic, metabolic, transporting, and cell cycle functions; displaying said function group of biopolymers in the display window; and displaying the searched keywords available in the selected subtree and said count in a separated display window on top of the display window displaying said function group of biopolymers therein (Fig. 8); highlighting in the display window a location of each of the biopolymers in the selected subtree whose biopolymer information contains the searched keywords available in the selected subtree (e.g., "*When a keywords 802 is selected from the search results 801 with a mouse cursor 804 or the like, genes with this keyword 802 (in the figure, "ribosomal") are marked on the dendrogram with marks 803 or the like*" p. 8, line 25 to p. 9, line 3; already cited in claim 6); displaying the highlighted keywords together with said function group of biopolymers (Fig. 8; already recited in claim 6) thereby confirming biopolymers sharing the common one of said functional characteristics are grouped in the selected subtree ("*whether the grouping was successful or not is confirmed by focusing on the functions of genes or keywords derived from*

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gene names to see whether relative genes are assembled in a subtree" p. 4, last 2 lines to p. 5; "*Keywords contained in the subtrees can be displayed in order to confirm success of clustering as well as to aid focusing of groupings and to aid selection of a clustering method*" p. 5, lines 20-23; "*By doing so, types of genes assembled in the subtree can readily be known. When the grouping is found failed, another grouping algorithm or (dis)similarity can be selected for another clustering)*" p. 9, lines 3-6).

Claim 6: designating at least one keyword from a keyword dictionary file (p.8, last paragraph; Fig. 8); searching in the selected subtree for biopolymers whose biopolymer information contains the designated keyword; and highlighting in the display window a location of each of the biopolymers in the selected subtree whose biopolymer information contains the designated keyword; displaying the highlighted keywords together with said function group of biopolymers in the display window thereby confirming relative biopolymers are assembled in the selected subtree (Fig. 8). Claim 12 recites an additional means for designating keywords from the keyword dictionary file (as already recited in claim 6).

The biopolymer information includes a unique nucleotide sequence identifier and a description of a corresponding nucleotide sequence, said description includes a source organism, a gene name/protein name, or a function (e.g., "*U25064 Rattus norvegicus ubiquitin/60S ribosomal subunit ...*" in Fig. 1; "*The system is provided with gene data 901 for storing gene information and gene expression patterns*" p. 14, last paragraph).

Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejections

Claims 3-6 were rejected under 35 U.S.C. 112, first paragraph, on the grounds that the claims contain subject matter which is not sufficiently disclosed in the specification.

Claim 3 was rejected for reciting "thereby simplifying a presentation in the display window," which is being amended into "thereby displaying the dendrogram with the icon rather than with the selected subtree." Claim 5 was rejected for reciting "thereby confirming relative biopolymers are assembled in the selected subtree," which is being amended into "thereby confirming biopolymers sharing the common one of said functional characteristics are grouped in the selected subtree" in claims 5-6. As the amendments deleted the alleged new matters, the rejections become moot.

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Claims 1-15 were rejected under 35 U.S.C. 112, second paragraph as being indefinite and the Examiner has requested clarification.

In claims 1, 3, 5, 6 and 8, the recitation of "data obtained by experiments under different conditions" was required for further clarification regarding what are the conditions different. As "under different conditions" is being deleted, the rejection becomes moot.

In claim 2, "designating a different clustering method for said grouping step" was required for further clarification regarding a first cluster method and the relationship to the grouping step. Claims 1-2 are being amended to better relate to two clustering methods and to disassociate the second clustering from the grouping step.

In claims 5 and 12, the recitation of "_selecting_ keywords from a keyword dictionary file" was required for further clarification regarding how the keywords relate to the data and how they are selected. Rather than "selecting," claim 5 is being amended to recite "_searching_ in the selected subtree for keywords available in a keyword dictionary file, and claim 12 is being amended to recite "means for _designating_ keywords from the keyword dictionary file."

In claim 5, the recitation of "displaying the selected keywords and said count in a separated display window on top of the display window displaying said function group of biopolymers therein thereby confirming _relative_ biopolymers are _assembled_ in the selected subtree" was required for further clarification regarding the meanings of "relative" and "assembled." As the wordings of "relative" and "assembled" are being deleted from claim 5, the rejection becomes moot.

Accordingly, the withdrawal of the outstanding informality rejections is in order, and is therefore respectfully solicited.
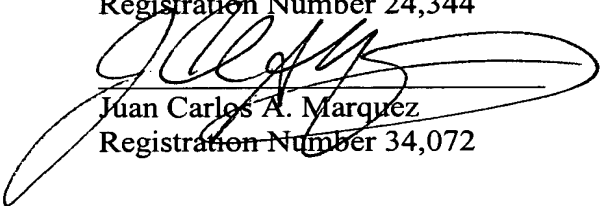
In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicant respectfully contends that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance

of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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